REMARKS

Claims 1-14 remain in the application, the claims having been editorially amended. Applicant notes with appreciation the indication of allowable subject matter in claims 5 and 10, but respectfully requests reconsideration of the application and allowance of all claims in view of the above amendments and the following remarks.

The rejection in paragraph 1 of the Office action is respectfully traversed. There is nothing ***per se*** improper in using the word "the" in a claim, and it is subject to legitimate objection when it is unclear what is being referred to. Such is not the case here, and the claims are clear, concise and definite. Nonetheless, the claims have been amended to correct each of the alleged problems, except for the phrases "the frequency domain" and "the time domain" and "the finest possible" where to make the suggested correction would be contrary to normal idiomatic English. In addition, "complex" in claim 8 finds antecedent basis in the last two lines of claim 7.

Claims 1, 2, 4, 6, 7 and 11-13 are rejected over prior art. Claims 5 and 10 are indicated as containing allowable subject matter. There is no prior art rejection of claims 3, 8, 9 and 14. Clarification of the status of these claims is respectfully requested.

The rejection of claims 1, 2, 4, 6, 7, and 11-13 in paragraph 3 is respectfully traversed.

The invention defined in claim 1 includes filtering in the frequency domain, DFT, IDFT and oversampling as processing operations performed for optimizing performance, and further provides that, for each carrier, the input sampling frequency corresponds to the modulation rate of the input signal, and the length of the DFT and the length of the IDFT are chosen in such a manner as to enable an oversampling ratio to be satisfied and to enable the frequency domain

filtering. In the example described at page 8 of the specification and reflected in claim 5, the input sampling rate of 3.84 MHz is the modulation rate of the input signal, i.e., an advantage of the present invention is that it can use as the input sampling frequency the natural sampling rate of the modulation, without requiring more rapid and more expensive sampling.

Hellberg '559, as stated in the Abstract, makes sure to use different overlaps on consecutive blocks that, on average, will give the same overlap on both the input and output ends, aligns the signal on consecutive blocks of time, and compensates for phase shifts due to frequency shifting. The Abstract further states concisely that the essence of the invention is to decouple the input and output transform lengths from each other and from the overlap, so that it is possible to use any transform length on the input together with any transform length on the output and at the same time use any overlap.

The flexibility which is central to Hellberg is contrary to the constraints recited in the independent claims of the present application. The various passages cited by the examiner appear to have little relevance to the claimed invention except for the last passage at lines 42-51 of column 5, where the patentee discusses the ratio LFFT/LIFFT and the flexibility in choice of oversampling.

But this is not all that is recited in claim 1. A significant feature of claim 1 seemingly overlooked by the examiner is the requirement that, for each carrier frequency, the input sampling frequency corresponds to the modulation rate of the input signal. Hellberg is silent as to this feature and in fact does not appear to mention the input sampling frequency anywhere. Thus, Hellberg cannot anticipate claim 1 or any of its dependent claims.

As to claim 7, that claim is directed to the feature of the invention described beginning at line 32 of page 10 of the specification, whereby phase jumps are compensated by multiplication of the input samples by a complex which is of unitary modulus and of opposite phase to the phase jump to be compensated. The examiner cites to the passage of Hellberg from line 45 of column 10 to line 52 of column 11 as support for this claimed feature, but what is disclosed there is different. Hellberg describes determining the phase to which the modulating sinusoid has moved and then multiplying the next block by a constant phasor. The constant phasor is not of unit modulus and opposite phase, but instead is designed such that the phase is returned to its initial value after a number of blocks. Thus, while Hellberg is relevant in that it teaches compensation for phase jumps, the technique is not the same as what is described in claim 7 nor is there anything that would have led the artisan to modify the Hellberg technique to replace the constant phasor with a complex as defined in claim 7. Accordingly, neither claim 7 nor any of its dependent claims could be anticipated or rendered obvious by Hellberg.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

Respectfully submitted,

/DJCushing/
David J. Cushing
Registration No. 28,703

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: August 8, 2006